



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,664	08/31/2001	Leon Li-Feng Jiang	SEN111	8130

7590 03/10/2004

LightRail Networks  
1395 Piccard Drive  
Suite 115  
Rockville, MD 20850

EXAMINER

BELLO, AGUSTIN

ART UNIT	PAPER NUMBER
----------	--------------

2633

DATE MAILED: 03/10/2004 3

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/942,664

Applicant(s)

JIANG ET AL.

Examiner

Agustin Bello

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Milton (U.S. Patent Number 6,084,694).

Regarding Claim 1, Milton teaches a wavelength division multiplexed optical communication system configured to simultaneously accept multiple data formats on individual optical channels comprising an optical waveguide configured to carry a wavelength division multiplexed optical communication signal comprising a plurality of optical channels (reference numerals 2, 3 in Figure 1), each optical channel having a discrete wavelength (column 2 lines 11-23), an optical add-drop multiplexer optically communicating with the optical waveguide configured to selectively add one or more optical channels to the wavelength division multiplexed optical communication signal (see Figure 3), a first source of data for imparting information onto a first optical channel (reference numeral 16 in Figure 3), a second source of data for imparting information onto the first optical channel (reference numeral 16 in Figure 3), an optical channel source for producing an optical channel at a first optical channel wavelength (reference numeral 14 in Figure 3), an optical network interface electrically communicating with the first and second data sources and electrically communicating with the optical channel source for placing data from the first and second data sources onto the first optical channel (reference

Art Unit: 2633

numeral 15 in Figure 3), an optical path optically communicating with the optical channel source and the optical add-drop multiplexer for transporting the first optical channel to the optical add-drop multiplexer (inherent in the connection between the electro-optical converters 14 of Figure 3 and the channel filters 18, 19 of Figure 3). Milton differs from the claimed invention in that Milton fails to specifically teach that the first data source imparts information in a first data format selected from ATM, IP, MPLS, Gigabit Ethernet, and Ethernet or that the second data source comprising voice traffic. However, Milton discloses that an objective of his invention is to alleviate the limitations of SONET based networks by expanding the capabilities of his network to include the ability to accept a plurality of different types of information formats including ATM, ADSL, and SONET (column 1 lines 44-67 and column 2 lines 1-7). Since Milton clearly suggests the ability to accept a plurality of different information formats in his system including the cell (ATM) and time division multiplex (SONET) formats claimed by the applicant, one skilled in the art would clearly have recognized that the first and second data sources of Milton could have been also included IP, MPLS, Gigabit Ethernet, Ethernet or voice traffic. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a first and a second data source that imparts information according to the formats claimed by the applicant as suggested by Milton.

3. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milton (U.S. Patent Number 6,084,694) in view of Wiley (U.S. Patent Number 6,137,800).

Regarding Claim 2, Milton teaches a wavelength division multiplexed optical communication system as recited in claim 1, but differs from the claimed invention in that Milton fails to teach a cell format module positioned between the first source of data for

Art Unit: 2633

imparting information onto the first optical channel in a cell format and between the optical network interface for formatting the information from the first data source to be output to the optical network interface. However, one skilled in the art would clearly have recognized that since Milton teaches that his system is compatible with a variety of protocols, one skilled in the art could easily have modified the system of Milton to include a cell format module, as claimed by the applicant, in order to facilitate more efficient use of the bandwidth of the system.

Furthermore, Wiley, in the same filed of endeavor, teaches that it is well known in the art to incorporate a cell format module positioned between the first source of data and between the optical network interface for formatting the information from the first data source to be output to the optical network interface (reference numeral 202 in Figure 2). Milton provides a suggestion to modify his system by reciting that the current SONET standard requires that all information payloads must be mapped (i.e. formatted) into a SONET envelope via an interface circuit (i.e. cell format module) in order to accommodate the variety of protocol formats used today (column 1 lines 44-67). There would have been a reasonable expectation of success in combining the teachings of Milton and Wiley for one skilled in the art being that both systems are designed to accommodate a plurality of different information formats and both are feature adding and dropping of signals in a subscriber system. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to include cell format module positioned between the first source of data and the optical network interface for formatting the information from the first data source to be output to the optical network interface, as taught by Wiley and suggested by Milton.

Art Unit: 2633

Regarding Claim 3, Milton teach a wavelength division multiplexed optical communication system as recited in claim 1 but differs from the claimed invention in that Milton fails to teach a TDM format module positioned between the second source of data for imparting information onto the first optical channel in a time division multiplexed format and between the optical network interface for formatting the information from the second data source to be output to the optical network interface. However, it is clear from the discussion regarding claim 2 that it would have been well within the realm of knowledge of one skilled in the art to have mapped the user information into a TDM format being that Milton requires that the various user data formats be mapped before they are transmitted in a TDM SONET system (column 1 lines 44-48). Furthermore, Wiley further teaches the conversion of ATM signals to TDM signals (column 12 lines 16-18) by using a format module (reference numeral 202 in Figure 2). One skilled in the art would clearly have recognized that since the format module taught by Wiley has the ability to convert between the ATM and TDM formats, there would have been a reasonable expectation of success for one skilled in the art to use the very same format module to convert user information in an ATM format to a TDM format and incorporate this feature in the device of Milton. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a TDM format module, as taught by Wiley, positioned between the second source of data of Milton and the optical network interface of Milton for formatting the information from the second data source to be output to the optical network interface in the device of Milton.

Regarding Claims 4-6, the combination of references teach the ability to use information from a plurality of data sources in a plurality of formats (column 2 lines 23-29 of Milton and

Art Unit: 2633

column 6 lines 33-38). Although the prior art only teaches the use of TDM, ATM, SONET, and ADSL, all of the protocols recited by the applicant are well known in the art and Official Notice is given that the formats recited by the applicant are known to be used in wavelength division multiplex optical communication systems. Furthermore, Milton specifically teaches that his system is transparent to any protocol. One skilled in the art would clearly have recognized the ability to use any of the protocols recited in claim 4-6 without producing a negative effect on the system of the combination of references. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to use ATM, IP, or MPLS format in the device of the combination of references.

Regarding Claim 7, Milton teaches a plurality of data sources (reference numeral 16 in Figure 3) and Wiley teaches the cell format module. Therefore, the combination of reference, in view of the discussion regarding claim 2, teach a wavelength division multiplexed optical communication system as recited in claim 2 further comprising additional data sources electrically communicating with the cell format module.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kaplan for teaching conversion of user information to ATM cell signals.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (703)308-1393. The examiner can normally be reached on M-F 8:30-6:00.


Art Unit: 2633

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello  
Examiner  
Art Unit 2633

AB

  
LESLIE PASCAL  
PRIMARY EXAMINER